



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jesse Wolfe et al

Attorney Docket No. : IL-11072

Serial No. : 106403556

Art Unit:

Filed : 8/18/2003

Examiner:

For : Process and Apparatus for Pulsed DC Magnetron Reactive Sputtering of Thin Film coatings on Large Substrates Using Smaller Sputter Cathodes

Commissioner for Patents  
Alexandria, VA 22313-1450

**CERTIFICATE OF MAILING UNDER 37 CFR 1.8(a)**

I hereby certify that the *attached* correspondence comprising:

1. Information Disclosure Statement (2 page)
2. Form PTO-1449  
Six (6) US Patents; Eight (8) Non Patent Literature Documents
3. Return Postcard

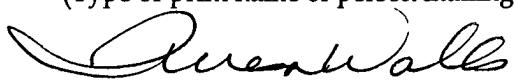
is being deposited with the United States Postal Service as First Class mail in an envelope addressed to:

Commissioner for Patents  
Alexandria, VA 22313-1450

on 9/9/2003

Teresa Walls

(Type or print name of person mailing paper)

A handwritten signature in cursive ink that reads "Teresa Walls".

(Signature of person mailing paper)



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Jesse Wolfe et al

Docket No. IL-11072

Customer No: 24981

Serial No. :

Art Unit :

Filed : 8/18/2003

Examiner :

For : Process and Apparatus for Pulsed DC Magnetron  
Reactive Sputtering of Thin Film Coatings on Large  
Substrates Using Smaller Sputter Cathodes

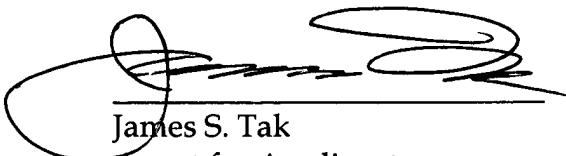
INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents  
Alexandria, VA 22313-1450

Dear Sir:

Forwarded herewith is an Information Disclosure Statement, Form-1449, in  
the above-identified application. Copy of the cited reference is enclosed.

Respectfully submitted,



James S. Tak  
Agent for Applicants  
Registration No. 46,367

Dated: 9-9-03

Enclosure:

As noted above



Please type a plus sign (+) inside this box +

Under the Paperwork Reduction Act of 1995, persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SB/08A (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO

## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet 1 of 2

Complete if Known

Application Number

Filing Date 8/18/2003

First Named Inventor Jesse Wolfe et al

Group Art Unit

Examiner Name

Attorney Docket Number IL-11072

### U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document Number	Kind Code <sup>2</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5798027		Lefebvre et al	8/25/1998	
		5702573		Biberger et al	12/30/1997	
		5225057		Lefebvre et al	7/6/1993	
		5346600		Nieh et al	7/13/1994	
		5618388		Seeser et al	4/8/1997	
		5851365		Michael Scobey	12/22/1998	

### FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)	Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>

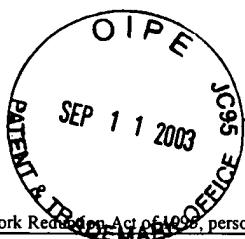
Examiner Signature Date Considered

Examiner: initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

\*Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

SEND TO: Commissioner for Patents, Washington, DC 20231.



Please type a plus sign (+) inside this box

Under the Paperwork Reduction Act of 1995, persons are required to respond to a collection of information unless it contains a valid OMB control number.

PTO/SB/08B (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

Substitute for form 1449A/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> (use as many sheets as necessary)		<b>Complete if Known</b>	
		Application Number	
		Filing Date	8/18/2003
		First Named Inventor	Jesse Wolfe et al
		Group Art Unit	
Examiner Name			
Sheet 2 of 2		Attorney Docket Number	IL-11072

### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.		
		Broughton J.N. et al	Long Throw Sputter Deposition of Titanium at Low Pressures	1995 VMIC Conference June 27-29 1995 ISMIC – 104/95/0201 (pages 201-203)
		Rossnagel S. M. et al	Sputter Deposition for Semiconductor Manufacturing	IBM Journal of Research and Development Volume 43, ½ 1999 Plasma Processing (pages 1-14)
		Nam-Woong Paik et al	The characterization of a New Plasma-Magnetron-Sputter-Type Negative Ion Source	Presented to the Journal of Applied Physics – Pre-print of a journal (4 pages)
		Bradley J.W. et al	Time-Resolved Langmuir Probe Measurements at the Substrate Position in a Pulsed Mid-frequency DC Magnetron Plasma	Elsevier Surface & Coatings Technology 135 2001 (pages 221-228)
		L.B. Jonsson et al	Frequency response in pulsed DC reactive sputtering processes	Elsevier Thin Solid Films 365 (2000) 43-48
		A.A. Mayo et al	Across-wafer nonuniformity of long throw sputter deposition	American Vacuum Society J. Vac Sci Technol. B 15(5) Sep/Oct 1997
		A. Belkind et al	Electrical Dynamics of Pulsed Plasmas	1998 Society of Vacuum Coaters 505 pages 321-326
		D. Carter et al	Parameter Optimization in Pulsed DC Reactive Sputter Deposition of Aluminum Oxide	2002 Society of Vacuum Coaters 45 <sup>th</sup> Annual Technical Conference Proceedings pages 570-577
Examiner Signature		Date Considered		

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup> Applicant is to place a check mark here if English language Translation is attached.

SEND TO: Commissioner for Patents, Washington, DC 20231